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CENTRAL INTELLIGENCE AGENCY

REPORT NO.

INFORMATION REPORT

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1. The Electro-Chemical Combine in Bitterfeld was founded by the Griesshelm-Electron Co and until the end of World War II belonged to the IG-Farben Concern. The Electro-Chemical Combine consists of a South Plant (Werk Sued) west of Bitterfeld, and a North Plant, south of Greppin and about one kilometer of the South Plant. To the north, the North Plant borders on the area of the VEL Dyestuffs Plant Wolfen, which extends from Greppin as far as Wolfen. The AGFA Film works of the SAG Fotoplenka is located west of Wolfen. Rich brown coal mines, which are an important source of raw materials and power for the plants mentioned are located in the vicinity of Bitterfeld-Wolfen. Other main sources of raw materials are the mineral potash and magnesium salt deposits near Staasfurt, and limestone and gypsum quarries in the Harz Mts. Other basic materials such as sulphur, manganese ores, aluminum oxide etc. must be imported. With regard to basic materials and intermediate products there is close cooperation among the chemical works in the Bitterfeld-Wolfen area and between this group of plants and the chemical works in Leuna and Schkopau. [1]

2. After the German surrender in 1945, the chemical plants in Bitterfeld were forbidden to continue working. However, when the Soviets arrived, they ordered that the works resume their production, that all the machinery and apparatus which had suffered war damage be repaired without delay, and that everything be put in tip-top shape.

3. In March 1946, the Soviets ordered the plant to be dismantled. Within three days, 30,000 workers arrived for the dismantling of machinery and installations. Departments dismantled were the mercury method alkali electrolysis, the foundry for ferro alloys and special products, a large part of the installations producing wolframic acid, molybdenum, formic acid, calcium formate, and the synthetic jewels department, besides the entire oxygen department at the North Plant; the departments producing potassium bichromate (except for a few units), potassium permanganate, and the potash processing department, at the South Plant. The high-pressure power station at Thalheim near Bitterfeld, which was constructed during the war for the Electro-Chemical Combine was also completely dismantled. In the plastics department, the nickel-plated polymerization autoclaves and a number of apparatus used for the processing of polyvinyl chloride were dismantled. Relatively little dismantling was done in the organic chemistry departments because the equipment was obsolescent.

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Dismantled were parts of the benzol chloride and of the tricresyl phosphate plants. Most heavily affected by dismantling were the light metal department including the scrap processing plant, and the 30,000 and 15,000-ton forging presses. Aluminum Plant II was also completely dismantled. Machinery dismantled represented about 65 percent of the total machinery available at that time.

4. In 1946, the Bitterfeld plant was turned over to the administration of the Soviet-owned enterprises in Germany. The remaining value of the plant was estimated at about 80 million Eastmarks, because the directives laid down by the Soviets for an assessment of assets were very rigid. Generally, the Soviets left a fraction of the machinery available in each of the plants dismantled by them, so it was possible to continue production on a reduced scale. Plans for the reconstruction of the Electro-Chemical Combine were drawn up already during the process of dismantling which was completed within about eight weeks.

5. The production departments of Plants North and South, which are under common administration, are subdivided into seven Main Departments. Each of them is headed by a departmental chief who is subordinate to the Chief Chemist. Most of the individual plants are managed by chemists who are assisted by mechanical engineers. Several engineers are subordinate to a Main Engineer and the main engineers are subordinate to the Chief Engineer. The Chief Chemist and Chief Engineer cooperate closely with one another. Disputes between them are settled by the Chief Director or his deputy, the Chief Chemist. The Commercial Director controls the Procurement and Sales Department, the Free Zones Bureau and is responsible for all traffic matters. The Chief Accountant, who is directly subordinate to the Chief Director of the Works, controls the Cost-Accounting Department, the Book-Keeping Department, and the Cash Department. The Personnel Chief and the Social Welfare Director are in charge of personnel and welfare matters respectively. Both of them are more or less political functionaries who closely cooperate with the SED factory organization and the representatives of the trades unions. They have to be SED members and in the discharge of their responsibilities follow the directives of the SED. The Research and Development Director is in charge of all research activities at the Electro-Chemical Combine. With a view to improving the quality of the goods produced at the Works, a Bureau for Technical Inspections was established in 1950. This bureau checks on the quality of all incoming and outgoing products and reports all defects to the plant management. The Buero fuer technische Arbeitsnormung (Works Standardization Bureau)(TAN) is concerned with all problems of standardization, piece work, the payment of workers, and the composition of the work forces of the individual shop departments. The TAN chief has a decisive say in the fixing of the budget for wages and salaries. The Chief Director is assisted in his work by the Technical Management Secretariat which, in the course of the last years, developed more and more into a planning department. In this bureau, all plans are drawn up and statistical records concerning the output of the works are kept there. Moreover, the smooth flow of production is controlled by this Bureau, and all disturbances are reported to the plant management.

6. The economic planning of the enterprise is based on the capacity of the individual departments, the possibility of increasing production, a detailed analysis of the market situation, availability of raw materials and other

auxiliary means of production, and the work force required. Production plans are drawn up by the Chief Director with the help of departmental chiefs concerned; difference is made between technical and financial planning.

7. The development of the output of the Combine reflects the progress of its rehabilitation. While, in 1947, commodities to the total value of 109 million Eastmarks were produced, the value of this production rose to 181 million Eastmarks in 1949, and exceeded the 200 million mark in 1950. The value of the output has continued to rise after 1950. Special attention is devoted in this connection to the question of prime costs, cost prices, and consumption of raw materials, energy and auxiliary materials. The individual production departments are assigned plan figures (Planzahlen) for prime costs and the consumption of materials, the observance of which is checked every month. This set-up led to a noticeable decrease in the consumption of materials and energy. In special conferences held every three months, the Chief Director of the Combine informs the work force of the plant of the result of the economy measures taken; criticism is voiced publicly, and action is taken against those responsible for failures. All efforts are made to prevent the total value of output from lagging behind plan figures.

8. Work productivity at the Combine also developed favorably. It is determined every month and is expected to rise continuously. With regard to the low selling price of basic chemical products its money value is not very high. However, it increased from 900 Eastmarks per capita and month in 1947 to approximately 2,000 Eastmarks in 1950. Work productivity has a decisive bearing on the fund available for wages and salaries. If, for instance, the value of the commodities to be produced in a given month has been fixed at 18 million Eastmarks and the per capita production quota per month stands at 1,800 Eastmarks, no more than 10,000 workers (the number resulting from the division of 18,000,000 by 1,800) may be assigned to work in the production departments. The monthly wages fund is also calculated on this basis. If the production plan is not fulfilled, workers must be discharged.

10. Generally, workers are paid by the hour; the wage rate is determined by the type of job performed. But most workers are also paid on a performance basis or receive performance bonuses. Performance wages are paid either to individuals or to groups of workers. Their rate depends on a careful determination of work norms. The work norm is calculated on the basis of the average performance of an able-bodied worker suited for the specific type of job. If norms are exceeded, the workers involved are paid a proportionate compensation; if the norm is reached but not exceeded, a bonus amounting to 15 percent of basic wage is paid.

11. The various shops of the Combine engaged in a specific production either operate individually or jointly with other shops. The most important production departments are those for inorganic products, organic products, the plastics department, the light metals department, and the departments for nitrogenous products and heavy metals. The Combine has a power plant of its own. The situation in Bitterfeld is still fluid. Many of the departments are continuously being enlarged and the production programs are very flexible, requiring frequent changes in the set-up of the individual shops. [2]

12. In the Inorganic Department, the products of alkali electrolysis, i.e., caustic soda, caustic potash, and chlorine gas, have always formed the basis for the main production of the Combine. In 1945 already, the production of caustic soda was pushed. This branch of production continues to be given priority. Caustic soda is delivered chiefly to rayon and cellulose yarn plants. Since

the modern electrolyser outfit of the North Plant which was equipped with mercury cells was dismantled in 1946, only two obsolescent Siemens-Billiter type electrolyzers remained available at the Nord Plant and another such electrolyzer with about 70 baths at the South Plant. Another mercury-type electrolyzer was used at the South Plant for the production of both caustic soda and caustic potash. Another mercury-type electrolyzer fitted with 60 baths was installed after many difficulties had been overcome. It is believed that the Combine has at present a annual capacity of at least 60,000 tons of caustic soda. Besides industrial caustic soda and potash in the form of flakes, 1,200 to 1,600 tons of special types of caustic soda and potash with very low contents of chlorine are produced annually for export to the USSR. Sodium metal, of which six tons are produced per month at an experimental plant, is exclusively delivered to the Buna rubber plant at Schkopau. The planned increase of this production was prevented by a lack of suitable baths. The department for the production of sodium chlorate and potassium chlorate experienced great difficulties in the last years, because the magnetite electrodes in use proved unsuitable. It was therefore planned to have them replaced by graphite electrodes. Nevertheless the output of this department increased considerably. Sodium chlorate and potassium chlorate are delivered to match factories and explosives plants, but they are also used as weed killers, particularly by the East German Railroads. Potassium chlorate is allegedly shipped in large quantities to China. In 1946, the Soviets ordered that facilities for the production of calcium metal be installed in one workshop of the department. The metal produced was to have a purity of 1/10,000 %. The plant performs electrolysis of chlorine-treated limestone in a series of graphite-lined baths, each of them measuring 100x70x50 cm. All are connected in series, the voltage of each subsequent bath being by 30 V lower than that in the preceding one. The calcium metal obtained in this way may still have an impurity of up to 1%. In order to further purify it, it is alloyed with copper in a separate building and then distilled in a high vacuum. All impurities are thus absorbed by the copper and a nearly absolutely pure product is obtained. In 1949, about 300 tons of calcium metal were produced, half of which consisted of distilled calcium metal. The production was suspended in 1950; however, the plant is being maintained in working order. Other potassium compounds produced at Bitterfeld are potassium bichromate and potassium permanganate. By utilizing chromium oxide, a total of 3,000 tons of potassium bichromate is annually produced, mainly for leather tanning purposes. Pure chromium oxide is manufactured for the dyestuffs industry. After 10 additional electrolytic cells had been installed, the Combine had an annual capacity of about 2,000 tons of potassium permanganate in 1951. Silirion and Trosilon, washing and industrial purification agents, are produced from caustic lyes at the North Plant. Chlorine gas obtained as a byproduct of the electrolysis of alkali is put to manifold uses. It is used for various inorganic and organic compounds, and in a condensed form it is shipped in large quantities to Sweden, Poland, and Czechoslovakia. Hydrochloric acid is produced by burning chlorine with an admixture of hydrogen with the help of generator gas. Hydrochloric acid is also produced, as a byproduct of the production of tricresyl phosphate. The hydrochloric acid plants were never utilized to capacity before the war, so it was possible to increase the production of this substance. A total of 80,000 tons are now produced per year. Nevertheless, there were often difficulties in meeting the requirements of the Wismut A.G. in Aue. By treating Thuringian barytes with chlorine, barium chloride is obtained, a substance used by East Germany, Poland and Czechoslovakia as vermicide, for the production of other barium compounds, as well as an agent for steel hardening. In spite of these manifold possibilities of utilization, not all of the chlorine obtained in the last years could be marketed.

In a phosphorus oven built in 1900 but modernized in the mean time, about 1,500 tons of yellow phosphorus are produced per year. Of this quantity, 1,000 tons are sold on the market. The basis for this production is pure apatite concentrate delivered from the Kola Peninsula. This is pre-treated in a phosphorus agglomerating plant before being processed in the oven. Minor quantities of red phosphor are also produced. Phosphorus oxychloride and phosphorus trichloride are obtained in an auxiliary plant. These substances are used by coal tar dyes factories, the glass industry, and laboratories. In the spring of 1950, a plant for the production of titanium dioxide was put into operation. This plant has a monthly output of about 40 tons of pure titanium dioxide and of about 40 tons of a lower grade titanium containing iron oxide; the impure titanium dioxide is used for welding electrodes. In the purification process elemental sulfur in lump form is obtained and most of it is marketed. One of the major products of the Combine are graphite electrodes. In several ovens pre-pressed mixtures of anthracite and coke are transformed into so-called electric graphite through electric molecular transformation. This graphite is used for both electrodes required in the steel production and for various units of the Siemens-Billitzer cells of the alkali electrolysis. The production process extends over two and a half days. At the end of the war, 600 tons of graphite electrodes could be produced in Bitterfeld per month; in 1950, when 15 graphite ovens were in operation, the monthly capacity rose to about 1,200 tons. At present, a total of 25 ovens is, allegedly, in operation.

The plant for the manufacture of synthetic precious stones had been rebuilt by 1948 and the old capacity of the works was reached at that time. For a long time, synthetic precious stones were delivered to the USSR. Since these deliveries were stopped, the stones have been cut at the works and sold for the manufacture of bearings for time-pieces and measuring instruments. For boiler generator gas obtained from brown coal briquettes and used for factory requirements, minor quantities of oxygen and nitrogen are produced at a liquid plant. The Inorganic Department of the Electro-Chemical Combine produces some additional substances such as toothpaste and acid, as well as heat-resistant cements, often only on special order.

13. Major products produced at the Organic Department include oxalic acid, tricresyl and triphenyl phosphate, benzoic acid, benzotrichloride, formic acid, calcium formiate, benzol chloride, carbon tetrachloride and some other organic substances used for crop dusting. Oxalic acid is produced from sugar and sold to enterprises which manufacture photographic developers, disinfectants and cleaning agents as well as tanning substances. Tricresyl and triphenyl phosphates are obtained from cresol and phenol respectively, which are supplied by the Leuna Chemical Combine. These substances are used as softening agents for plastics and at the AGFA Film Plant of the SAG Fotoplenka in Wolfen. Benzoic acid is produced as a preserving agent from toluol via benzotrichloride while carbon tetrachloride is used as a solvent and produced from carbon disulfide delivered by the Leuna Works. Other insecticides produced include Gesarol obtained from Polish benzol via benzol chloride as well as the so-called Hexa and Gamma-products. Chloral and chloral hydrate is produced from alcohol.

The installations for the production of formic acid were completely dismantled. However, a new such installation is said to have been built at the North Plant. This installation, allegedly, also produces calcium formiate. In 1951, plans were being considered for a production of methylene chloride and of benzene

Bitterfeld; however, no detailed information was available to source as to its equipment, except for the fact that orders had been placed for the delivery of three transformers of 30,000 kVA each. The aluminum produced is sold in ingots or lumps; pressed semi-finished products, castings and other finished products are also marketed. Since 1951, magnesium has also been produced at the light-metal department, a new plant erected in the northern portion of the North Plant.

16. Prior to the end of World War II, the heavy metals department included some installations for the production of ferro-molybdenum and wolframic acid at the North Plant. Minor quantities of zirconium were also produced. The installations were partly dismantled, partly deactivated. Production has been resumed on a limited scale. Produced are molybdenum metals, wolframic acid, zirconium alloys, barium metal, manganese metal and some ferroalloys. The desired enlargement of the heavy metals department, particularly the expansion of the production of molybdenum and wolfram, proved impossible because of the unsolved raw materials problem. Among the commodities which sell very profitably are welding-on alloys and special alloy electrodes. The same applies to cerium metals and various white metal alloys produced in auxiliary plants.

17. Nitrogenous products are produced on the basis of ammonia delivered by the Leuna Works. Ammonia yields nitric acid, most of which is further processed into nitrate of ammonium and nitrate of lime (Kalkammonsalpeter). Most of the nitrate of ammonium is used for the production of explosives at the explosives plants at Gnaschwitz and Schoenebeck/Elbe. Sodium nitrite and nitrate are also produced. In September 1952, a portion of the nitric acid plant was destroyed by an explosion, allegedly caused by sabotage. The damage was quickly repaired.

18. A number of byproducts are also obtained in Bitterfeld, eg. seasoning agents and soup cubes. New production methods are being tested in some laboratories. Among others, experiments are said to have been made with hydrazine and hydrazine hydrate as well as with sodium cyanide. All the experiments made at Bitterfeld are exclusively connected with factory requirements. After the war, all laboratories where research work was conducted were subordinated to a central research institute, which comprises special departments for organic and inorganic chlorides, light metals and plastics. The basic problem for this research work has always been to find a means of utilizing the large quantities of chlorine obtained from the electrolysis of alkalies. The most important result obtained was a procedure of producing a raw alumina by using hydrochloric acid as a means of dissolution. This raw alumina may eventually be used for the production of alumina, the basic substance of aluminum. The properties of various organic chlorine compounds are also being investigated. Much attention is devoted to the production of insecticides. The plastics laboratory is interested in the production of a heat-resistant Igelit. Other research work conducted concerned the production of phosphorus soluble after admixture of citrates (citratloeslicher Phosphor) to be used for fertilizers.

19. The Electro-Chemical Combine in Bitterfeld has its own power supply. The power station in Bitterfeld was built in conjunction with the establishment of large chemical plants in this area. Work on it was started in 1915, but it did not reach its full capacity before 1937. Boiler houses 1 through 3 were built between 1915 to 1917. They are equipped with 46 boilers which have a rated pressure of 20 atmospheres each and an output of 7.5 t/h of steam each. All of the

are Steinmueller sloping-tube space boilers. The fourth boiler house was built in 1928/ 1929. It was equipped with 8 boilers delivered by the firms of HANOMAG and Karlsruher Maschinenfabrik and 1 boiler delivered by the firm of Steinmueller. All these boilers are equipped with mechanical trough-grate fire boxes delivered by the firm of Fraenkel & Viehbahn. They have a rated pressure of 21 atmospheres each and furnish steam at a pressure of 20 atmospheres and a temperature of 400°C. The normal output is 25 tons of steam per boiler and hour. The one Steinmueller boiler has a capacity of 52 tons of stear per hour. Between 1934 and 1936, 10 high-pressure boilers of type Schmidt-Hartmann equipped by the Vereinigte Kesselwerke in Duesseldorf were installed in Boiler House No 4. These boilers produce steam of a pressure of 103 atmospheres and a temperature of 500°C. They are also equipped with mechanical trough grates delivered by the firm of Fraenkel & Viehbahn. They have an average output of 40 t/h of steam. Before the last mentioned group of nine boilers were installed, two experimental boilers were set up, one of them a Schmidt-Hartmann boiler, and the other one a modified Benson boiler. The two boilers are still in operation. All the boilers available at the Electro-Chemical Combine burn raw brown coal produced in the neighboring brown coal mines. The coal is shipped to the factory by means of special coal cars fitted with bottom discharging facilities. Coal is stored in an elevated bin with a storage capacity of 15,000 tons of coal. This quantity represents the coal requirements of the Combine for a 36-hour period. The coal is mechanically conveyed to the boilers after being crushed in two crushing plants. On the way the ashes are transported to a deactivated open cast mine about three km distant, the flushing method is used. The engine house of the Combine is located at a right angle to the boiler houses. The engines were set up from west to east between 1915 and 1937. Engines 1 through 12 are arranged in a row. Except for one, they are condensing engines with an inlet pressure of about 18 atmospheres. Engine No 3 is a back pressure engine used for the production of a steam of five atmospheres pressure for factory requirements. The other engines available at the engine house are arranged in two rows; in the second row are the two back-pressure engines which are fed with the steam of the 100-atmosphere steam plant. North of the engine house are the three distribution stations Nos 1, 2 and 5, each of them equipped with five kV switching facilities. The engine house and the switching stations are connected by 5-kV cables, most of them laid in special cable ducts. Switching station No 4 contains a 5- and a 30-kV switching plant and serves a 30-kV net of lines within the areas of the Bitterfeld-North Plant, the Dyestuffs Works, the Film Plant in Wolfen and the surrounding coal mines. Distribution stations Nos 6 and 7 are equipped with 100-kV switching plants fed by transformers installed in two distribution stations. Distribution station No 8 is a combined indoor and open air switching station. Distribution stations No 6 and 7 feed the grid system built in 1934 to 1938 between the factories in Aken, Stassfurt, Buna-Schkopau, Leuna, as well as the coal mines and briquette factories at Nachterstedt and Deuben/Theissen with a view to providing an even supply of electricity. The grid was later supplemented by a 100-kV connection to the North Plant and the dyestuffs works. This grid is connected via the Susigke switching station with the grid of the electric plants and through distribution station No 8 to the power station at Zschornewitz. A third connection to this public network of power transmission lines exists via the distribution stations at Doellnitz, Schkopau and Dieskau. Between the distribution stations located north of the engine house, there is the plant for processing the boiler water.

A water purification plant is also available west of the power station. At this plant, water obtained from the coal mines is processed for use in the boilers. South of the boiler houses are seven cooling towers used for the recooling of the condensing water of the condensers. Other installations available in the area of the power station of the Electro-Chemical Combine include a fitter's and motor vehicle repair shop, an electric and mechanical workshop, carpenter shop, painting shop, high-frequency shop, telephone shop, meter shop, an overhead-line repair shop, and a number of subsidiary buildings. The production of electric current was already inadequate in the summer of 1950.

hexachloride, but in late 1952, the production of these substances had not yet been started. In 1949/1950, special attention was devoted to the so-called Freons, derivatives of fluoro methanes predominantly used as refrigerants, but possibly also useful in the manufacture of plastics. In Bitterfeld, differentiations are made between Freon-12 (CF_2Cl_2), Freon-13 (CF_3Cl), Freon-14 (CF_4) and Freon-22 (CHF_2Cl). Source did not know whether the production of these substances has been started in the meantime, he only stated that the Bitterfeld works were to cooperate closely with the filo plant at Dohna.

14. Considerable efforts were made to increase the production of plastic materials. The liquid vinyl chloride supplied by the Buna plant in Schkopau is polymerized in rotatable autoclaves into PCU powder or Igelit. This polyvinyl chloride serves as basic substance in the production of various plastics. In 1951, a new four-mangle calender suitable for the pressing of all kinds of foils was put into operation. Mainly 0.1 foils used for packing purposes were manufactured. In 1952, it was planned to set up a 3- or 4-mangle calender for the manufacture of Igelit floor covering. There was also great interest in the production of vinidur tubes. The number of tube machines available was to be increased from two to four or five. The tubes and pipes produced were used for roof gutters and plumbing.

The building of the so-called PC Department where polyvinyl chloride underwent further treatment with tetrachlorethane was dismantled in 1946. In 1948, the production of this substance was resumed in a section of the PCU Department, because there was a great demand for filter cloths and other similar fabrics by the AGFA Plant in Wolfen. Besides foils and pipes, a variety of other products was manufactured from PCU powder, as, for instance, shoes at a rate of up to 30,000 pairs per month. Washable paper hangings were also produced from this powder. After the process of high-frequency welding of Igelit was improved, the production of air cushions, bicycle tubes, water-tight bags of all kinds, rain-proof garments etc. was taken up. PCU paints and glues besides PC solutions for lac varnishes were also produced.

15. The aluminum department at the South Plant, which had been built during World War I and was dismantled in 1946/ 1947, was subsequently reconstructed with an annual capacity of 16,000 tons of foundry aluminum. The newly erected plant utilizes electrolytic rectifiers instead of the transformers previously in use. The efficiency of the installation is 24 800 kWh at a voltage of 1,350 V per ton of aluminum as against 21,000 kWh in the old plant. The loss of current is mainly due to the poor quality of the alumina and electrodes. After all aluminum scrap available had been processed, the procurement of alumina met with the greatest difficulties. This bottleneck was eliminated by the delivery of bauxite from Hungary and its further processing at the Lauta works. After the so-called three-stage procedure, small quantities of pure aluminum of 99.998 to 99.999 percent are produced by using molten foundry aluminum as anode, while pure aluminum is used as liquid cathode, and a fused salt as an electrolyte. Pure aluminum is now only used for a few special products. The processing of foundry aluminum is only done in the light metal foundry. After the 30,000 and 15,000-ton form presses were dismantled, only some bar extruding presses remained available. Presses available include a 6,000-ton horizontal press, a 3,000-ton vertical press and some lighter presses. In the course of 1953, former Aluminum Plant II in the southern portion of the North Plant was to be reconstructed for an annual output of 15,000 tons. The framework of the building for this new aluminum plant was completed when source left

The situation in this respect will become even more critical after the opening of the second aluminum department at the South Plant. For this reason it was planned to enlarge the capacity of the steam boiler plants. The enlargement of the steam boiler installations at the North Plant was to be completed in 1952. This project involved the replacement of the 8[illegible] kW back pressure turbine dismantled by the Soviets. It was the function of this turbine to reduce the steam produced from a pressure of 20 atmospheres to one of five. The replacement turbine was scheduled to be set up by 1 July 1953 and to be furnished by the turbine factory in Dresden-Neustadt, previously Brueckner-Kanis. The enlargement of the boiler installations at the South Plant had to be delayed because of a shortage of materials. In April 1952, the scheduled annual output of 1,370 million kWh was increased to 1,390 kWh. In 1953, the production of electric current is to be increased to 1,420 and in 1954 to 1,435 to 1,440 kWh. Since the production of electric power would be inadequate after the establishment of a second aluminum plant, it was planned to obtain additional power from the newly founded Elbe power station. Source did not know whether the plans for the expansion of the power producing facilities of the Electro-Chemical Combine could be executed. In 1952, the output of electric current was maintained at its actual level only by improvisation. All the engines and boilers of the power station of the Combine were overburdened and were liable to cause breakdowns in the power supply system at any time. Since many of the engineers and skilled workers have fled to the West, there is an acute shortage of skilled technical personnel. [4]

20. From 1945 to 1947, the Electro-Chemical Combine was guarded by a Soviet military unit; subsequently a VP unit moved to the plant. In early 1950, security measures at the power station were tightened, and the power station was surrounded by a wall. A total of 150 VPs were assigned to the power station and each boiler house was guarded by one VP. All personnel employed at the power station were issued special passes. Security within the plant was at first in the hands of a MVD headquarters located in the main administrative building. Later, it was taken over by an SSD agency whose chief changed frequently in the recent years.

25X1A1. [redacted] Comment. For location of industrial plants in the Wolfen-Bitterfeld area, see Annex 1. The sketch was made on the basis of aerial photographs and a 1:25,000 map.

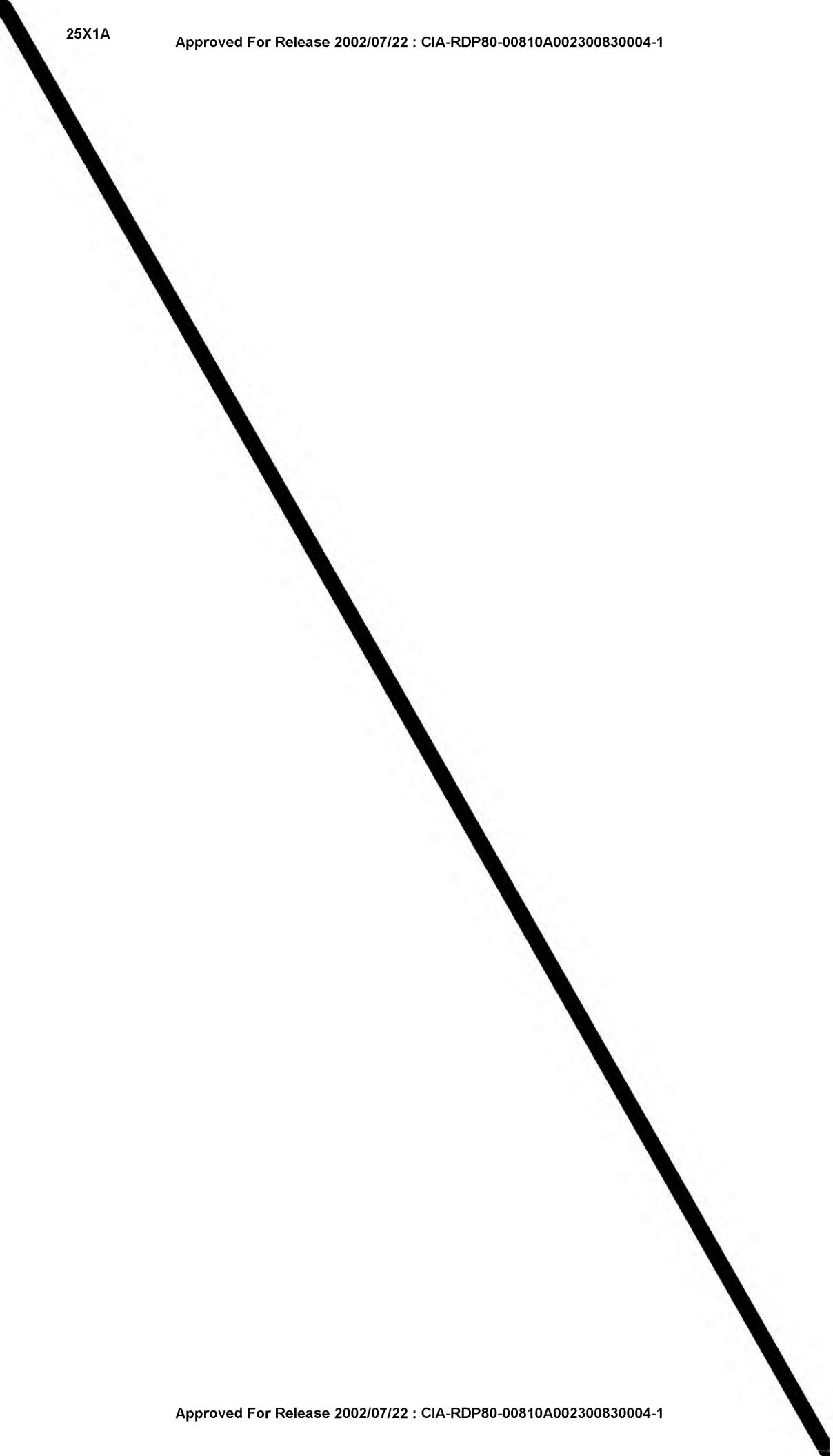
25X1A 2. [redacted] Comment. For layout of the South and North Plants of the Electro Chemical Combine, see Annexes 2 and 3. The plans were made after original records brought up-to-date by concordant information furnished by different sources.

25X1A 3. [redacted] Comment. For excerpts from original records on the 1950 and 1952 production figures, see Annex 4. For 1953 delivery quota for metals as drawn up by the State Secretariat for the Chemical Industry in December, see Annex 5.

25X1A 4. [redacted] Comment. For output of the turbo generators and diagrammatic sketch showing grid connections, see Annexes 6 and 7.

25X1A 5. [redacted] Comment: Probably nitrate.

Enclosures: 7 annexes to ORR, OCD/Industrial Register, Air.



25X1A

Annex 6

Turbogeneratoren des Kraftwerkes BITTERFELD

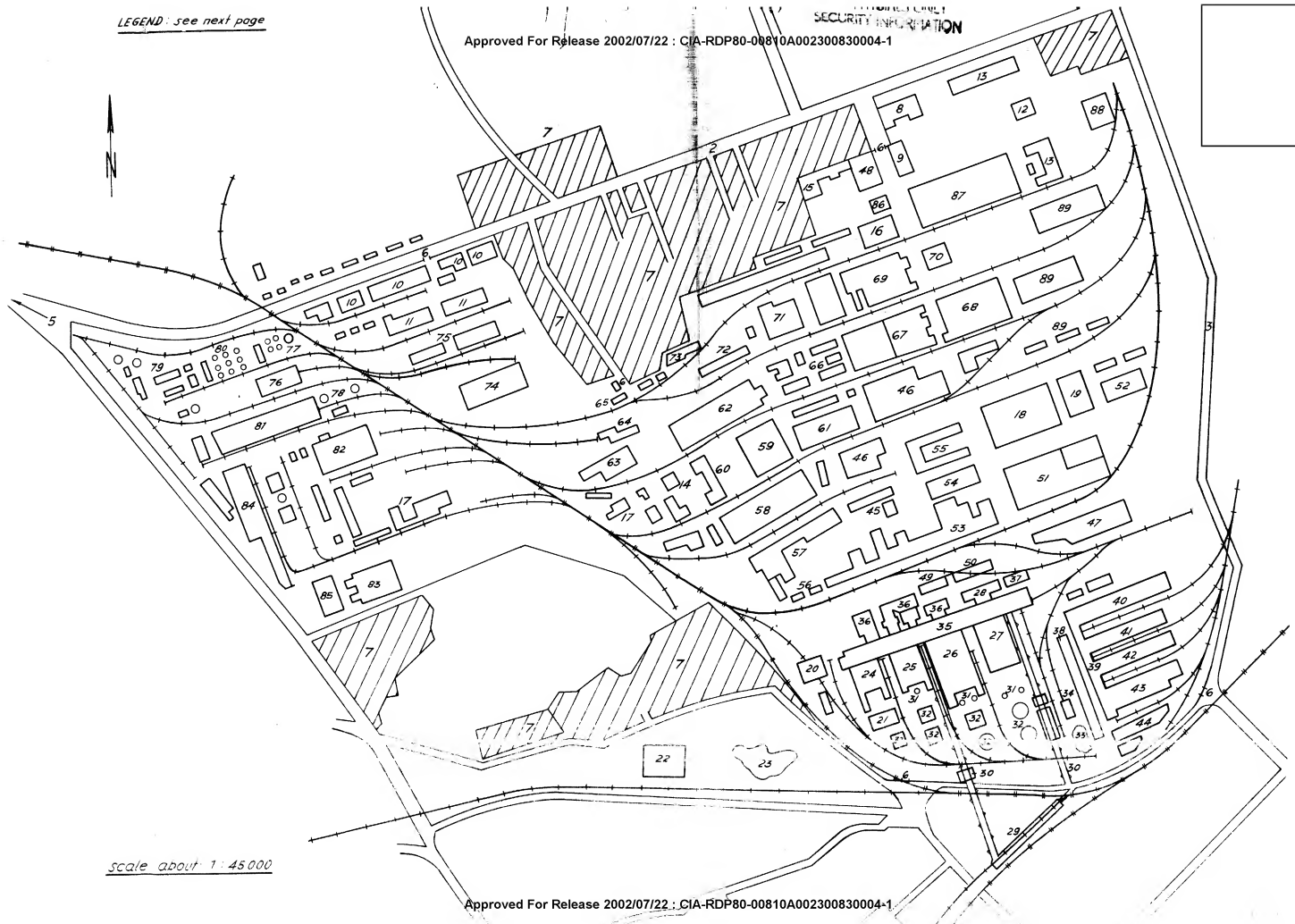
Nummer des Aggregates	Baujahr	Drehzahl U/min	Hersteller	Type	Nennleistung kW	Frischdampfzustand Druck atue	Frischdampfzustand Temp. °C	Leistungsfaehigkeit kVA	cos phi	Betriebsspannung kV
1a	1924	3000	Thyssen	Kond.-Ueberdr.	6000	20	350	8000	0,75	6,6
1	1915	3000	AEG	" Gleichdr.	5600	18	350	6250	1,0	5,2
2	1915	3000	AEG	" "	5600	18	350	6250	1,0	5,2
3	1933	3000	AEG	Gegdr.- "	6000	18,2	350	6250	1,0	5,2
4	1915	3000	Escher-* WyssCie.	Kond. "	8000	18	350	8000	1,0	5,2
5	1915	1500	AEG	" "	12500	18	350	13750	0,8	5,2
6	1938	3000	AEG	" "	17000	18,5	350	20000	0,85	5,6
7	1917	1500	BBC	" - Ueberdr.	14000	18	350	14000	0,89	5,2
8	1923	3000	EWC*	" Gleichdr.	10000	18	340	10000	1,0	5,2
9	1928	3000	EWC*	" "	15000	18,5	350	15800	0,95	5,25
10	1929	3000	EWC*	" "	15000	18,5	350	16200	0,95	5,25
11	1929	3000	AEG	" "	33700	18,5	400	37500	0,9	5,25
12	1935	3000	AEG	" "	33700	18,5	400	37500	0,75	5,35
13	1936	3000	AEG	Vorschalt-Geg.Dr.	17000	90	480	20000	0,6	5,62
14	1937	3000	AEG	-Gleichdr.	17000	90	480	20000	0,8	5,62

25X1A

Annex 5 to

Lieferplan des ELEKTROCHEMISCHEN KOMBINATES in BITTERFELD fuer Leichtmetalle und Schwermetalle im Jahre 1953.

	1953	I/53	II/53	III/53	IV/53
1. Leichtmetalle:					
Huettenaluminium	15 910	2 685	2 475	4 790	5 960
Reinstaluminium	185	70	22	23	70
Aluminium-Griess	100	25	25	25	25
Aluminium und Al-Legierungen aus Umschmelzungen	4400	1 110	1 110	1 110	1 110
Strangpresshalbzeug aus Al-Legierungen	3 210	827	827	828	728
Formguss aus Al und Al-Legierungen	1 300	325	325	325	325
Schmiede-u.Gesenkpress-stuecke aus Al-Legierg.	30	7	8	7	8
Magnesium und Mg-Legierungen	1 315	30	30	30	1 225
Formguss aus Mg-Legierungen	70	15	15	15	25
2. Schwermetalle:					
Molybdaenmetall chem.rein	6	1,5	1,5	1,5	1,5
Manganmetall	24	6	6	6	6
Cereisen	7,2	1,8	1,8	1,8	1,8
Lagermetall (BK und BNN)	600	150	150	150	150



Elektrochemisches Kombinat BITTERFELD, Werk SUED

1. Strasse nach WOLFEN
2. Aeussere Zoerbiger Strasse
3. Karlstrasse
4. Strasse nach LEIPZIG
5. STRASSE nach DESSAU
6. Werkeinfahrten mit Pfoertnerhaeusern
7. Wohnhaeuser
8. Haupt-Verwaltungsgebaeude
9. Polizei-Unterkunft,Barackenbau
10. Mehrere Verwaltungs-und Buerogebaeude
11. Feuerwehr-Unterkunft
12. Kleines Laboratorium fuer biologische Versuche mit Schaedlingsbekaempfungsmitteln.Frueher Laboratorium fuer Uebermikroskopie
13. Wissenschaftliche Laboratorien
14. Gebaeude der Transportbetriebe
15. Elektriker-Werkstatt
16. Materialpruefstelle
17. Verschiedene Werkstattbetriebe
18. Hauptwerkstatt
19. Schmiede

Kraftwerk

20. Umkleide-,Wasch-und Baderaeume
21. Schlosserwerkstatt des Kraftwerkes
22. Grubenwasser-Reinigung
23. Wasser-Klaeranlage

noch Leg.zu Anl.2

24. Kesselhaus 1

25. " 2

26. " 3

27. " 4

28. Kessel-Speisewasser-Aufbereitung,nach dem Aetznatron-Soda und dem Wofatit-Verfahren.

29. Hochbunker fuer Braunkohlen

30. Schraegbruecken fuer den Kohlentransport zu den Kesselhaeusern mit Brecheranlagen zum Zerkleinern der Rohbraunkohlen

31. Schornsteine

32. 7 holzverkleidete Kuehltuerme

33. Wasser-Klaerteich

34. Lagergebaeude

35. Maschinenhaus mit den Turbogeneratoren

36. Schaltanlagen

37. Schaltwarte

Aluminiumwerk I

38. Werkstattbetriebe

39. Maschinen-und Transformatorenhaus

40. Aluminium-Elektrolyse 1

41. " " 2

42. Reinst-Aluminium-Elektrolyse

43. Lagergebaeude

44. Bueroraeume und Lehrlingswerkstatt des Aluminiumwerks

45. Leichtmetallschmiede,genannt Gesenkschmiede

46. Giesserei und Strangpressenbetrieb fuer Aluminium-Formteile.

noch Beg.zu Anl.2

Kunststoff-Abteilung

47. PCU-Grundherstellung,Polymerisationsbetrieb; im Westteil Rohfabrikation
48. PCU-Tiefzieherei und Verarbeitung von Polyvinylchlorid zu Gebrauchsgegenstaenden,wie Fruehstuecksdosen usw.(im Nordteil des Werkes am Haupteingang
49. Verwaltung der Igelitbetriebe
50. Igelit-Laboratorium und Schlauch-Spritzbetrieb
51. PCU-Verarbeitung; in der NO-Ecke des Gebaeudes Nachchlorung von Polyvinylchlorid zu PC.
52. Igelit-Schuhfabrik

Organische Abteilung

53. MAINTHAL- Organische Betriebe zur Herstellung von Chlorbenzol, Trikresyl-und Triphenylphosphat,Phosphortri-und Phosphoroxydchlorid,Tetrachlorkohlenstoff uam.
54. Maschinen-und Pumpenhaus
55. Verwaltung und Laboratorien der Organischen Abteilung

Anorganische Abteilung

56. Alter, modernisierter Phosphorofen; Erzeugung von gelbem und rotem Phosphor
57. Herstellung von Graphit-Elektroden fuer die Elektrolyse-Betriebe. Eingebaut 25 Oefen.
58. Aetznatron-und Aetzkaligewinnung in SIEMENS-BILLTER-Zellen und einer neuen Quecksilber-Zellen-Anlage.
59. Anlage zur Herstellung von Kaliumbichromat und reinem Chromoxyd.
60. Laboratorien der Anorganischen Abteilung und analytisches Hauptlaboratorium
61. Gebaeude mit Buero-und Sanitaetsraeumen
62. Aetzkalischmelze und Herstellung von Bariumchlorid
63. Garagen
64. Anlage zur Erzeugung von Generatorgas aus Braunkohlenbriketts
65. Fernsprechzentrale
66. Komplex von mehreren Gebaeuden,Salzsaeurefabrikation
67. Sogenannter Chlorat-Bau;Gewinnung von Natrium-und Kalium-Chlorat und von Rohcalcium
68. Calcium-Destillation; 1947 in Betriebgesetzt
69. Umformerhaus mit zwei eingebauten grossen dreistufigen Gleichstrom-Umformern von je 3 x 4 000= 12 000 Amp.,einem einstufigen-von 6 000 Amp.und einigen kleineren Umformern
70. Auffallender,etwa 50 m hoher Turm zur Luftansaugung fuer die Umformer in Pos.69
71. Kalk-Brennofen
72. Gewinnung von Titansioxyd; frueher Pottaschefabrikation, deren Anlagen demontiert wurden.
73. Herstellung von Magnetit-Elektroden fuer die Erzeugung von Calciumchlorat
74. Schuppen,enthaltend eine im Kriege nicht fertiggestellte Griesogen-Anlage zur Sauerstoff-Speicherung
75. Phosphosagglomeration
76. Erzeugung von Kaliumpermanganat
77. Erzeugung von Oxalsaeure

Stickstoff-Abteilung

78. Grosser,tubenfoermiger Behaelter,etwa 1000 m^3 fassend, zur Speicherung von LEUNA-Ammoniak fuer die Salpetersaeurefabrik
79. Ammoniak- Verbrennungsanlage
80. Adsorptionstuerme fuer Salpetersaeure
81. Weiterverarbeitung von Salpetersaeure zu Ammonsalpeter (Ammoniumnutrat)
82. Erzeugung von Kalkammonsalpeter
83. Lagerschuppen fuer Kalkammonsalpeter
84. Lagerschuppen und mechanische Abpackerei von Ammoniumnitrat

Sonstige Gebaeude

85. Bandanlage fuer Versuche zum Bestrich von Papier mit ICU
86. Barackenbau, Versuchsanlage mit Hochfrequenzschwingungen
87. Zeitweilig Lagerung von Aluminium-Schrott
88. Aeltere LINDE-Anlage zur Erzeugung von Sauerstoff und Stickstoff,die auf Flaschen gefuellt werden.
89. Gebaeudereste von demontierten Anlagen.

Annex to

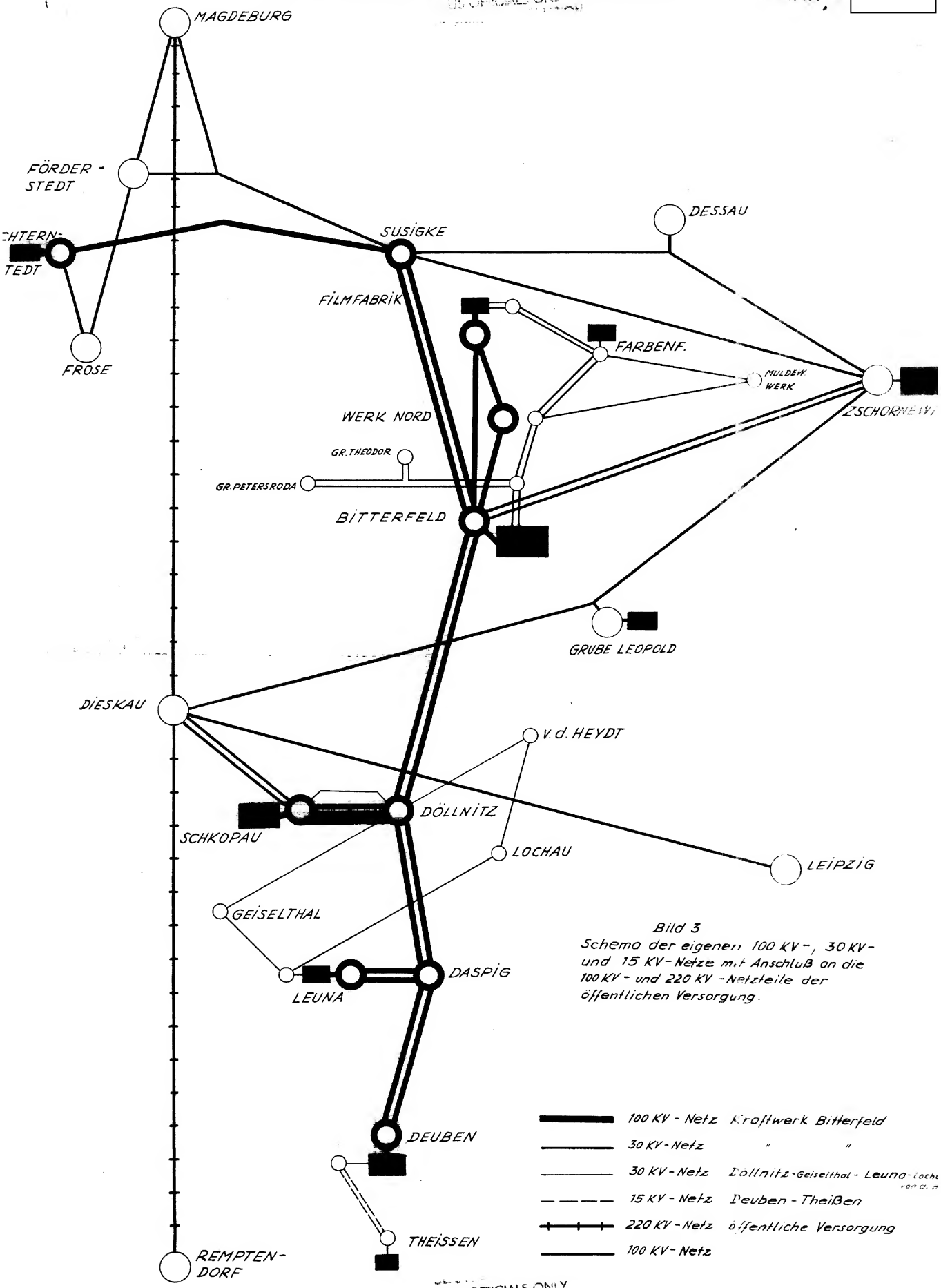


Bild 3
Schema der eigenen 100 KV-, 30 KV- und 15 KV-Netze mit Anschluß an die 100 KV- und 220 KV-Netzteile der öffentlichen Versorgung.

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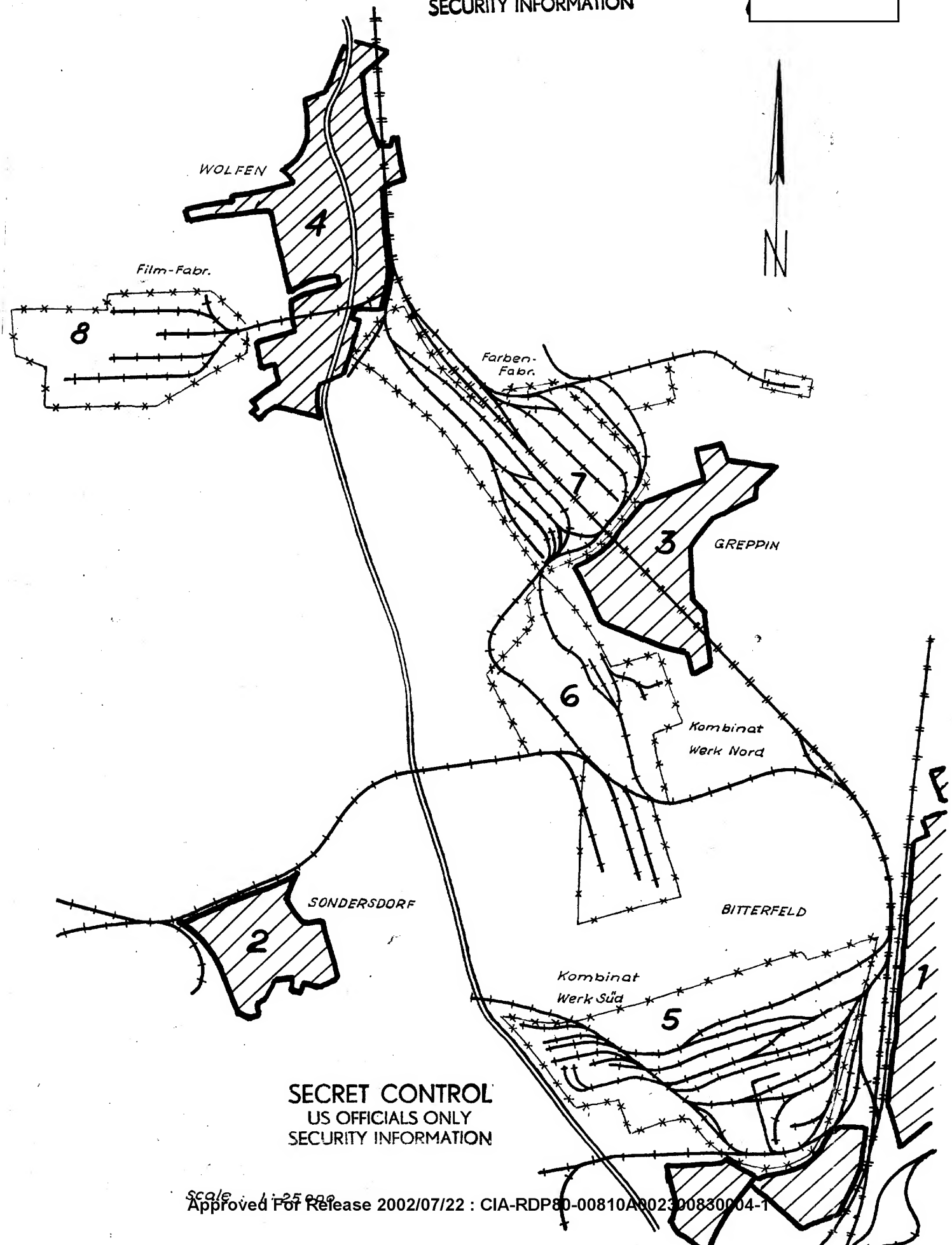
Produktions-und Planzahlen des ELEKTROCHEMISCHEN KOMBINATS in BITTERFELD in den Jahren 1950 und 1952.

Erzeugnisse	Erzeugung 1950 Gesamt	Erzeugung 1950 Waren	Erzeugnisplan 1952 Gesamt	Erzeugnisplan 1952 Waren
Anorganische Produkte (t)		Vermutl		
Aetznatron-Lauge	48 000	28 216	61 400	39 600
Aetznatton fest,tech.	-	-	7 200	3 600
Aetznatron fest, chlorarm	-	-	1 650	1 650
Aetzkali-Lauge	15 800	1 860	26 000	3 600
Aetzkali fest	-	-	4 800	4 784
Aetzkali fest, chlorarm	-	-	1 200	1 200
Kalium-u.Natriumchlorat	13 505	13 505	18 000	17 988
Kaliumbichromat	-	-	4 800	3 400
Pottasche	-	-	12 000	11 700
Kaliumpermanganat	1 610	1 610	2 700	2 700
Natronbleichlauge	-	-	5 000	4 650
Chlor fluessig	16 685	14 120	18 000	10 150
Chlorcalcium-Lauge	6 790	2 033	4 000	3 200
Chlorcalcium-Pulver	-	-	700	650
Chlorkalk	-	-	3 500	3 500
Salzsaeure I	51 600	26 210	64 400	26 800
" II	-	-	15 600	13 200
Phosphor gelb, roh	1 350	-	1 355	-
" " rein	-	-	1 350	730
" rot	-	-	30	30
Bariumchlorid	1 215	1 080	1 080	840
Bariumcarbonat	-	-	2 000	1 520
Chromsaeure	35	35	400	400
Chromoxyd	-	-	30	30
Basochrom	-	-	960	960
Borsaeure	24	24	24	24
Graphitelektroden f.chem.Ind.	-	-	3 900	1 100
" f.metall.Ind.	-	-	9 600	9 600
Phosphortrichlorid roh	-	-	2 445	-
" rein	-	-	100	80
Phosphoroxydchlorid	-	-	2 600	-
Schwefel in Brocken	-	-	1 900	1 885
Siliron u.Trosilon	-	-	26 400	26 320
Titandioxyd	517	430	1 320	1 170
Saeurekitte	1 023	935	1 000	920
Sauerstoff,verdichtet(1000 m^3)	-	-	12260	60
Stickstoff " "	-	-	120	108
Stickstoffprodukte (t)				
Rohsalpetersaeure	18 020	-	20 780	-
Ammonsalpeter techn.	9 210	9 210	5 800	5 800
Kalkammosalpeter	134 890	134 890	167 550	167 550
Natriumnitrit-Nitratlauge	-	-	2 570	2 470

Organische Produkte (t)				
Chlorbenzol	-	-	3 600	940
o-Diochlorbenzol	-	-	285	285
p- "	-	-	500	500
Benzotrichlorid roh	632	-	520	-
" rein	-	-	465	-
Benzyl-Benzalchlorid	-	-	150	150
Benzoesaeure	160	160	240	240
Trikresylphosphat	2 980	1 490	4800	3 600
Triphenylphosphat	-	-	180	180
Tetrachlorkohlenstoff	3 720	3 670	5 100	4 800
Gesarol	-	-	2 960	2 850
Chloral rein	695	310	1 850	370
Hexaprodukte	-	-	4 500	4 500
Oxalsaeure krist.	1 710	1 650	1 800	1 750
Ameisensaeure	-	-	1 000	1 000
Calciumformiat	-	-	1 920	-
Methylenchlorid	-	-	100	-
Kunststoffe u.Kunststofferzeugnisse(t)				
Igelit PCU	4 690	1 690	6 000	2 400
" PC	-	-	1 200	1 085
Vinidur-Halbzeug	605	345	1 400	750
Igelit-Weichhalbzeug	3 415	2 200	4 000	2 700
Fussbodenbelag (1000 m^2)	-	-	960	960
Stammloesung fuer Lacke	-	-	440	340
Leichtmetalle u.Legierungen(t)				
Huettenaluminium in Masseln I	68	68	15 000	5 900
" " II	-	-	2 185	2 185
Aluminium-Formstuecke	-	-	2 000	2 000
Reinstaluminium	-	-	270	270
Aluminiumgriess	-	-	500	500
Masseln aus Aluminiumschrotte	3 213	2 115	5 400	1 400
Aluminium-Strangpresshalbzeug	3 410	1 290	4 500	3 860
Formstuecke aus Aluminium-Legierg.	-	-	6 750	-
Gesenk-Pressprodukte	-	-	100	40
Aluminium-Formguss	1 080	1 040	3 500	3 480
Masseln aus Magnesium-Legierungen	-	-	200	200
Formguss aus Magnesium-Legierungen	135	135	24	24
Sonstige Produkte (t)				
Aufschweisslegierungen	78	75,3	140	140
Stahlformguss	625	620	263	240
Magnetlegierungen	-	-	180	180
Calciumaluminium	-	-	30	30
Lagermetall eign.Erzeugung	-	-	120	120
" Umarbeitung	-	-	360	360
Molybdaen, chem.rein	-	-	6	6
Wolframsaeure	13	13	30	30
Hormit	-	-	38	38
Hormin	-	-	360	360
Strom (Millionen kWh)	-	-	1 370	260
Dampf (1000 t)	-	-	9 300	530

Annex



scale 1 : 25 000

 Legende zu Annex 1

1. Stadtgebiet BITTERFELD
2. Ortschaft SONDERSDORF
3. Ortschaft GREPPIN
4. Stadtgebiet WOLFEN
5. Elektrochemisches Kombinat BITTERFELD Werk SUED, VEB
6. " " " Werk NORD, VEB
7. Farbenfabrik WOLFEN, VEB
8. Filmfabrik AGFA der SAG FOTOPLENKA, WOLFEN.

Annex 3 to

scale: about 1:45 000

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Legende zu Anner 5

Elektrochemisches Kombinat BITTERFELD, Werk NORD

1. BINO-Suppenwuerze-Betrieb; mehrere Gebaeude
2. 100-kV- Transformatoren-Station
3. 30 -kV- Transformatoren-Station
4. Seilbahnantrieb und Aufenthaltsgebaeude
5. Grundmauern der ehemaligen Metallhuette
6. Aetznatron-Elektrolyse;Westbau -Grundmauern der demontierten Quecksilber-Anlage
7. Kesselhaus
8. Erzeugung von Calciumchlorid.Frueher Calcium-Hypochlorid-Anlage, die demontiert wurde
9. Molybdaenreduktion;eingebaut 6 bis 7 kleine Drehrohroefen,in denen Molybdaensaeure zu Molybdaen reduziert wird.
10. Natrium-Elektrolyse-Gewinnung von metallischem Natrium
11. Aetznatron-Elektrolyse, im Westteil des Gebaeudes-Maschinenhaus
12. Im Westbau Loeserei und Eindampferei von Aetznatron;im Ostteil werden Siliron und Trosilin als Wasch-und Reinigungsmittel hergestellt
13. 2 Gasometer fuer je etwa 10 000 m^3 Wasserstoff
14. Betriebsleitung und Laboratorien fuer die Schwermetallbetriebe
15. Chlorkalkbetrieb
16. Groesserer,langgestreckter Bau des Schwermetallbetriebes in dem vor allem Wolframsaeure und Molybdaen gewonnen werden.
17. Erzeugung von Ammonium-p-Wolframat als Kontaktstoff fuer das LEUNA-Werk
18. Elektrolyse von Calcium-und Cer-Mischmetallen
19. Edelstein-Synthesebetrieb
20. Sauerstoff-Gasometer fuer den Edelsteinbetrieb
21. Oxalsaeurekristallisation und Ameisensaeure-Erzeugung
22. Ehemaliger Verwaltungsbau;jetzt Laboratorium fuer die organischen Betriebe
23. Sauerstoff,Erzeugung
24. Gasometer fuer Wasserstoff,etwa 1 000 m^3 Fassungsvermoegen
25. Speiseraum III
26. Elektrikerwerkstatt
27. Speiseraum II
28. Verwaltungsgebaeude
29. Schlosserwerkstatt
30. Wohngebaeude
31. Eisenbahngleise nach BITTERFELD
32. Strasse nach WOLFEN und DESSAU
33. Anschlussgleis zur Grubenbahn
34. Nebenbahn nach ZOERBIG
35. Strasse nach BITTERFELD und zum Werk SUED
36. Paasevalstrasse
37. Gertrudstrasse
38. Landwehrkanal

Aluminiumwerk II

39. Freiluft-Transformatoren
40. 100- kV-Freiluft-Transformatoren

25X1A

41. Gleichrichtergebaeude
42. Gleichrichtergebaeude fuer die Ofenhaeuser 1 und 2
43. Kuehltuerme aus Holz
44. Pumpenhaus zur Wasserversorgung des Werkes
45. Lagergebaeude
46. Werkstaetten
47. Magazin
48. Garagen
49. Verwaltungsgebaeude
50. Einfahrt und Pfoertnerhaus
51. Laboratorium
52. Ofenhaus 1 mit Tonerdelager im N-Teil
53. " 2 " " " "
54. " 3
55. " 4
56. " 5
57. Aufbereitungsanlage
58. Schornstein
59. Giesserei
60. Masselfabrik
61. Ofenbogenfabrikation und Nippelsteingiesserei
62. Nippelsteingiesserei
63. Siloanlage